

# SEQUENCE LISTING

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<120> NPC1L1 (NPC3) AND METHODS OF USE THEREOF

<130> JB01603-K1-US

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<141> 2003-08-22

<150> 60/397,442

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<151> 2003-07-17

<160> 50

<170> PatentIn version 3.1

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Ala Ala Gln Gly Glu Leu Tyr Thr Pro Lys His Glu Ala Gly Val Cys	
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acc ttt tac gaa gag tgc ggg aaa aac cca gag ctc tct gga ggc ctc	144
Thr Phe Tyr Glu Glu Cys Gly Lys Asn Pro Glu Leu Ser Gly Gly Leu	
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acg tca cta tcc aat gta tcc tgc ctg tct aac acc ccg gcc cgc cac	192
Thr Ser Leu Ser Asn Val Ser Cys Leu Ser Asn Thr Pro Ala Arg His	
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Val Thr Gly Glu His Leu Ala Leu Leu Gln Arg Ile Cys Pro Arg Leu	
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Tyr Asn Gly Pro Asn Thr Thr Phe Ala Cys Cys Ser Thr Lys Gln Leu	
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ctg tcc tta gaa agc agc atg tcc atc acc aag gcc ctt ctc acg cgc	336
Leu Ser Leu Glu Ser Ser Met Ser Ile Thr Lys Ala Leu Leu Thr Arg	
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Cys Pro Ala Cys Ser Asp Asn Phe Val Ser Leu His Cys His Asn Thr	
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tgc agc cct gac cag agc ctc ttc atc aac gtc acc ccg gtg gtt gag	432
Cys Ser Pro Asp Gln Ser Leu Phe Ile Asn Val Thr Arg Val Val Glu	
130 135 140	
ccg ggc gct gga gag cct cct gcc gtg gtg gcc tat gag gcc ttt tat	480
Arg Gly Ala Gly Glu Pro Pro Ala Val Val Ala Tyr Glu Ala Phe Tyr	
145 150 155 160	
cag cgc agc ttt gct gag aag gcc tat gag tcc tgc agc cag gtg cgc	528
Gln Arg Ser Phe Ala Glu Lys Ala Tyr Glu Ser Cys Ser Gln Val Arg	
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Ile Pro Ala Ala Ala Ser Leu Ala Val Gly Ser Met Cys Gly Val Tyr	
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Gly Ser Ala Leu Cys Asn Ala Gln Arg Trp Leu Asn Phe Gln Gly Asp	
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Thr Gly Asn Gly Leu Ala Pro Leu Asp Ile Thr Phe His Leu Leu Glu	
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Pro Gly Gln Ala Leu Pro Asp Gly Ile Gln Pro Leu Asn Gly Lys Ile	

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Gln Asp Cys Ala Ala Ser Cys Pro Val Ile Pro Pro Pro Glu Ala Leu	260	265	270	
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Arg Pro Ser Phe Tyr Met Gly Arg Met Pro Gly Trp Leu Ala Leu Ile	275	280	285	
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Ile Ile Phe Thr Ala Val Phe Val Leu Leu Ser Ala Val Leu Val Arg	290	295	300	
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Leu Arg Val Val Ser Asn Arg Asn Lys Asn Lys Ala Glu Gly Pro Gln	305	310	315	320
gaa gcc ccc aaa ctc cct cat aag cac aaa ctc tca ccc cat acc atc				1008
Glu Ala Pro Lys Leu Pro His Lys His Lys Leu Ser Pro His Thr Ile	325	330	335	
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Leu Gly Arg Phe Phe Gln Asn Trp Gly Thr Arg Val Ala Ser Trp Pro	340	345	350	
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Gly Leu Thr Phe Ile Glu Leu Thr Thr Asp Pro Val Glu Leu Trp Ser	370	375	380	
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Ala Pro Lys Ser Gln Ala Arg Lys Glu Lys Ser Phe His Asp Glu His	385	390	395	400
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Phe Gly Pro Phe Phe Arg Thr Asn Gln Ile Phe Val Thr Ala Arg Asn	405	410	415	
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Arg Ser Ser Tyr Lys Tyr Asp Ser Leu Leu Gly Ser Lys Asn Phe	420	425	430	
agt ggg atc ctg tcc ctg gac ttc ctg ctg gag ctg ctg gag ctt cag				1344
Ser Gly Ile Leu Ser Leu Asp Phe Leu Leu Glu Leu Leu Glu Leu Gln	435	440	445	
gag agg ctt cga cac ctg caa gtg tgg tcc cct gag gca gag cgc aac				1392
Glu Arg Leu Arg His Leu Gln Val Trp Ser Pro Glu Ala Glu Arg Asn	450	455	460	
atc tcc ctc cag gac atc tgc tat gcc ccc ctc aac cca tat aac acc				1440
Ile Ser Leu Gln Asp Ile Cys Tyr Ala Pro Leu Asn Pro Tyr Asn Thr	465	470	475	480

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Asn Arg Thr Leu Leu Met Leu Thr Ala Asn Gln Thr Leu Asn Gly Gln	
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acc tcc ctg gtg gac tgg aag gac cat ttc ctc tac tgt gca aat gcc	1584
Thr Ser Leu Val Asp Trp Lys Asp His Phe Leu Tyr Cys Ala Asn Ala	
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Pro Leu Thr Phe Lys Asp Gly Thr Ser Leu Ala Leu Ser Cys Met Ala	
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Asn Asn Tyr Pro Ala Asp Asp Pro Arg Met Ala Gln Ala Lys Leu Trp	
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610 615 620	
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625 630 635 640	
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Cys Ser Arg Val Ala Val Glu Ser Lys Ala Thr Leu Gly Leu Gly Gly	
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Val Ile Val Val Leu Gly Ala Val Leu Ala Ala Met Gly Phe Tyr Ser	
675 680 685	
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Tyr Leu Gly Val Pro Ser Ser Leu Val Ile Ile Gln Val Val Pro Phe	
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Leu Val Leu Ala Val Gly Ala Asp Asn Ile Phe Ile Phe Val Leu Glu	
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Gly Arg Thr Leu Gly Ser Val Ala Pro Ser Met Leu Leu Cys Ser Leu	
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Ser Glu Ala Ile Cys Phe Phe Leu Gly Ala Leu Thr Pro Met Pro Ala	
755 760 765	
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Val Arg Thr Phe Ala Leu Thr Ser Gly Leu Ala Ile Ile Leu Asp Phe	
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Leu Leu Gln Met Thr Ala Phe Val Ala Leu Ser Leu Asp Ser Lys	
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Arg Gln Glu Ala Ser Arg Pro Asp Val Leu Cys Cys Phe Ser Thr Arg	
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Lys Leu Pro Pro Pro Lys Glu Lys Glu Gly Leu Leu Leu Arg Phe Phe	
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Val Met Leu Leu Phe Leu Thr Leu Phe Gly Ala Asn Leu Tyr Leu Met	
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Cys Asn Ile Asn Val Gly Leu Asp Gln Glu Leu Ala Leu Pro Lys Asp	
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Ser Tyr Leu Ile Asp Tyr Phe Leu Phe Leu Asn Arg Tyr Leu Glu Val	
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Tyr Val Ala Ile Ala Ala Ser Ser Trp Val Asp Asp Phe Ile Asp Trp	
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ctg acc ccg tcc tcc tcc tgc tgt cgc ctt tat ata cgt ggc ccc cat	2928

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Lys	Asp	Glu	Phe	Cys	Pro	Ser	Thr	Asp	Thr	Ser	Phe	Asn	Cys	Leu	Lys	
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Asn	Cys	Met	Asn	Arg	Thr	Leu	Gly	Pro	Val	Arg	Pro	Thr	Ala	Glu	Gln	
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Phe	His	Lys	Tyr	Leu	Pro	Trp	Phe	Leu	Asn	Asp	Pro	Pro	Asn	Ile		
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Arg	Cys	Pro	Lys	Gly	Gly	Leu	Ala	Ala	Tyr	Arg	Thr	Ser	Val	Asn		
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Leu	Ser	Ser	Asp	Gly	Gln	Val	Ile	Ala	Ser	Gln	Phe	Met	Ala	Tyr		
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His	Lys	Pro	Leu	Arg	Asn	Ser	Gln	Asp	Phe	Thr	Glu	Ala	Leu	Arg		
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Ala	Ser	Arg	Leu	Leu	Ala	Ala	Asn	Ile	Thr	Ala	Asp	Leu	Arg	Lys		
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Val	Pro	Gly	Thr	Asp	Pro	Asn	Phe	Glu	Val	Phe	Pro	Tyr	Thr	Ile		
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Ser	Asn	Val	Phe	Tyr	Gln	Gln	Tyr	Leu	Thr	Val	Leu	Pro	Glu	Gly		
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Ile	Phe	Thr	Leu	Ala	Leu	Cys	Phe	Val	Pro	Thr	Phe	Val	Val	Cys		
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tac	ctc	cta	ctg	ggc	ctg	gac	atg	tgc	tca	ggg	atc	ctc	aac	cta		3429
Tyr	Leu	Leu	Leu	Gly	Leu	Asp	Met	Cys	Ser	Gly	Ile	Leu	Asn	Leu		
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ctc	tcc	atc	att	atg	att	ctc	gtg	gac	acc	att	ggc	ctc	atg	gct		3474
Leu	Ser	Ile	Ile	Met	Ile	Leu	Val	Asp	Thr	Ile	Gly	Leu	Met	Ala		
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Val	Trp	Gly	Ile	Ser	Tyr	Asn	Ala	Val	Ser	Leu	Ile	Asn	Leu	Val		
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Thr	Ala	Val	Gly	Met	Ser	Val	Glu	Phe	Val	Ser	His	Ile	Thr	Arg		
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Ser	Phe	Ala	Val	Ser	Thr	Lys	Pro	Thr	Arg	Leu	Glu	Arg	Ala	Lys		

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cag ctt att cag atc ttc ttc Gln Leu Ile Gln Ile Phe Phe 1235	ttc cgc ctc aac Phe Arg Leu Asn 1240	ctt ctg atc acc Leu Leu Ile Thr 1245	3744
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agc tat ctg gga cca gat gtt Ser Tyr Leu Gly Pro Asp Val 1265	aac caa gct ctg gta Asn Gln Ala Leu Val 1270	cag gag gag Gln Glu Glu 1275	3834
aaa cta gcc agc gag gca gca Lys Leu Ala Ser Glu Ala Ala 1280	gtg gcc cca gag cct Val Ala Pro Glu Pro 1285	tct tgc cca Ser Cys Pro 1290	3879
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Thr	Phe	Tyr	Glu	Glu	Cys	Gly	Lys	Asn	Pro	Glu	Leu	Ser	Gly	Gly	Leu
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Val Thr Gly Glu His Leu Ala Leu Leu Gln Arg Ile Cys Pro Arg Leu  
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Tyr Asn Gly Pro Asn Thr Thr Phe Ala Cys Cys Ser Thr Lys Gln Leu  
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Leu Ser Leu Glu Ser Ser Met Ser Ile Thr Lys Ala Leu Leu Thr Arg  
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Cys Pro Ala Cys Ser Asp Asn Phe Val Ser Leu His Cys His Asn Thr  
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Arg Gly Ala Gly Glu Pro Pro Ala Val Val Ala Tyr Glu Ala Phe Tyr  
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Thr Gly Asn Gly Leu Ala Pro Leu Asp Ile Thr Phe His Leu Leu Glu  
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Pro Gly Gln Ala Leu Pro Asp Gly Ile Gln Pro Leu Asn Gly Lys Ile  
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Ala Pro Cys Asn Glu Ser Gln Gly Asp Asp Ser Ala Val Cys Ser Cys  
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Arg Pro Ser Phe Tyr Met Gly Arg Met Pro Gly Trp Leu Ala Leu Ile  
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Ile Ile Phe Thr Ala Val Phe Val Leu Leu Ser Ala Val Leu Val Arg  
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 305 310 315 320

Glu Ala Pro Lys Leu Pro His Lys His Lys Leu Ser Pro His Thr Ile  
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Leu Thr Val Leu Ala Leu Ser Phe Ile Val Val Ile Ala Leu Ala Ala  
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Gly Leu Thr Phe Ile Glu Leu Thr Thr Asp Pro Val Glu Leu Trp Ser  
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Ala Pro Lys Ser Gln Ala Arg Lys Glu Lys Ser Phe His Asp Glu His  
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Glu Glu Ala Phe Leu Lys Glu Met Glu Ser Phe Gln Arg Asn Thr Ser  
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Asp Lys Phe Gln Val Ala Phe Ser Ala Glu Arg Ser Leu Glu Asp Glu  
 610 615 620

Ile Asn Arg Thr Thr Ile Gln Asp Leu Pro Val Phe Ala Val Ser Tyr  
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Ile Ile Val Phe Leu Tyr Ile Ser Leu Ala Leu Gly Ser Tyr Ser Arg  
 645 650 655

Cys Ser Arg Val Ala Val Glu Ser Lys Ala Thr Leu Gly Leu Gly Gly  
 660 665 670

Val Ile Val Val Leu Gly Ala Val Leu Ala Ala Met Gly Phe Tyr Ser  
 675 680 685

Tyr Leu Gly Val Pro Ser Ser Leu Val Ile Ile Gln Val Val Pro Phe  
 690 695 700

Leu Val Leu Ala Val Gly Ala Asp Asn Ile Phe Ile Phe Val Leu Glu  
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Tyr Gln Arg Leu Pro Arg Met Pro Gly Glu Gln Arg Glu Ala His Ile  
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Gly Arg Thr Leu Gly Ser Val Ala Pro Ser Met Leu Leu Cys Ser Leu  
 740 745 750

Ser Glu Ala Ile Cys Phe Phe Leu Gly Ala Leu Thr Pro Met Pro Ala  
 755 760 765

Val Arg Thr Phe Ala Leu Thr Ser Gly Leu Ala Ile Ile Leu Asp Phe

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Arg Gln Glu Ala Ser Arg Pro Asp Val Leu Cys Cys Phe Ser Thr Arg				
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Lys Leu Pro Pro Pro Lys Glu Lys Glu Gly Leu Leu Leu Arg Phe Phe				
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Arg Lys Ile Tyr Ala Pro Phe Leu Leu His Arg Phe Ile Arg Pro Val				
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Val Met Leu Leu Phe Leu Thr Leu Phe Gly Ala Asn Leu Tyr Leu Met				
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Cys Asn Ile Asn Val Gly Leu Asp Gln Glu Leu Ala Leu Pro Lys Asp				
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Ser Tyr Leu Ile Asp Tyr Phe Leu Phe Leu Asn Arg Tyr Leu Glu Val				
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Gly Pro Pro Val Tyr Phe Val Thr Thr Ser Gly Phe Asn Phe Ser Ser				
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Glu Ala Gly Met Asn Ala Thr Cys Ser Ser Ala Gly Cys Lys Ser Phe				
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Ser Leu Thr Gln Lys Ile Gln Tyr Ala Ser Glu Phe Pro Asp Gln Ser				
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Tyr Val Ala Ile Ala Ala Ser Ser Trp Val Asp Asp Phe Ile Asp Trp				
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Leu Thr Pro Ser Ser Ser Cys Cys Arg Leu Tyr Ile Arg Gly Pro His				
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Lys Asp Glu Phe Cys Pro Ser Thr Asp Thr Ser Phe Asn Cys Leu Lys				
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Phe His Lys Tyr Leu Pro Trp Phe Leu Asn Asp Pro Pro Asn Ile				
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Gln	Leu	Ile	Gln	Ile	Phe	Phe	Phe	Arg	Leu	Asn	Leu	Leu	Ile	Thr
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Lys Leu Ala Ser Glu Ala Ala Val Ala Pro Glu Pro Ser Cys Pro  
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Gln Tyr Pro Ser Pro Ala Asp Ala Asp Ala Asn Val Asn Tyr Gly  
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 Arg Leu Ala Gln Ser Glu Pro Tyr Thr Thr Ile His Gln Pro Gly Tyr  
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 Cys Ala Phe Tyr Asp Glu Cys Gly Lys Asn Pro Glu Leu Ser Gly Ser  
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 Leu Met Thr Leu Ser Asn Val Ser Cys Leu Ser Asn Thr Pro Ala Arg  
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Lys Ile Thr Gly Asp His Leu Ile Leu Leu Gln Lys Ile Cys Pro Arg	
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Leu Tyr Thr Gly Pro Asn Thr Gln Ala Cys Cys Ser Ala Lys Gln Leu	
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Cys Pro Ala Cys Ser Asp Asn Phe Val Asn Leu His Cys His Asn Thr	
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Cys Ser Pro Asn Gln Ser Leu Phe Ile Asn Val Thr Arg Val Ala Gln	
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Leu Gly Ala Gly Gln Leu Pro Ala Val Val Ala Tyr Glu Ala Phe Tyr	
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Gln His Ser Phe Ala Glu Gln Ser Tyr Asp Ser Cys Ser Arg Val Arg	
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Val Pro Ala Ala Ala Thr Leu Ala Val Gly Thr Met Cys Gly Val Tyr	
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Gly Ser Ala Leu Cys Asn Ala Gln Arg Trp Leu Asn Phe Gln Gly Asp	
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aca ggc aat ggt ctg gcc cca ctg gac atc acc ttc cac ctc ttg gag	672
Thr Gly Asn Gly Leu Ala Pro Leu Asp Ile Thr Phe His Leu Leu Glu	
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cct ggc cag gcc gtg ggg agt ggg att cag cct ctg aat gag ggg gtt	720
Pro Gly Gln Ala Val Gly Ser Gly Ile Gln Pro Leu Asn Glu Gly Val	
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Ala Arg Cys Asn Glu Ser Gln Gly Asp Asp Val Ala Thr Cys Ser Cys	
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Gln Asp Cys Ala Ala Ser Cys Pro Ala Ile Ala Arg Pro Gln Ala Leu	
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Asp Ser Thr Phe Tyr Leu Gly Gln Met Pro Gly Ser Leu Val Leu Ile	
275 280 285	
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Ile Ile Leu Cys Ser Val Phe Ala Val Val Thr Ile Leu Leu Val Gly	
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Phe Arg Val Ala Pro Ala Arg Asp Lys Ser Lys Met Val Asp Pro Lys	
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aag ggc acc agc ctc tct gac aag ctc agc ttc tcc acc cac acc ctc	1008
Lys Gly Thr Ser Leu Ser Asp Lys Leu Ser Phe Ser Thr His Thr Leu	
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Leu Gly Gln Phe Phe Gln Gly Trp Gly Thr Trp Val Ala Ser Trp Pro	
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Gly Leu Val Phe Thr Glu Leu Thr Thr Asp Pro Val Glu Leu Trp Ser	
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Ala Pro Asn Ser Gln Ala Arg Ser Glu Lys Ala Phe His Asp Gln His	
385 390 395 400	
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Phe Gly Pro Phe Phe Arg Thr Asn Gln Val Ile Leu Thr Ala Pro Asn	
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cgg tcc agc tac agg tat gac tct ctg ctg ctg ggg ccc aag aac ttc	1296
Arg Ser Ser Tyr Arg Tyr Asp Ser Leu Leu Leu Gly Pro Lys Asn Phe	
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Ser Gly Ile Leu Asp Leu Asp Leu Leu Leu Glu Leu Leu Glu Leu Gln	
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Glu Arg Leu Arg His Leu Gln Val Trp Ser Pro Glu Ala Gln Arg Asn	
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Ile Ser Leu Gln Asp Ile Cys Tyr Ala Pro Leu Asn Pro Asp Asn Thr	
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agt ctc tac gac tgc tgc atc aac agc ctc ctg cag tat ttc cag aac	1488
Ser Leu Tyr Asp Cys Cys Ile Asn Ser Leu Leu Gln Tyr Phe Gln Asn	
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Asn Arg Thr Leu Leu Leu Leu Thr Ala Asn Gln Thr Leu Met Gly Gln	
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Thr Ser Gln Val Asp Trp Lys Asp His Phe Leu Tyr Cys Ala Asn Ala	
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Pro Leu Thr Phe Lys Asp Gly Thr Ala Leu Ala Leu Ser Cys Met Ala	
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Gly	Lys	Asp	Tyr	Ser	Glu	Ala	Glu	Ala	Leu	Ile	Met	Thr	Phe	Ser	Leu	
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aac	aat	tac	cct	gcc	ggg	gac	ccc	cgt	ctg	gcc	cag	gcc	aag	ctg	tgg	1776
Asn	Asn	Tyr	Pro	Ala	Gly	Asp	Pro	Arg	Leu	Ala	Gln	Ala	Lys	Leu	Trp	
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Glu	Glu	Ala	Phe	Leu	Glu	Glu	Met	Arg	Ala	Phe	Gln	Arg	Arg	Met	Ala	
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Gly	Met	Phe	Gln	Val	Thr	Phe	Thr	Ala	Glu	Arg	Ser	Leu	Glu	Asp	Glu	
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Ile	Asn	Arg	Thr	Thr	Ala	Glu	Asp	Leu	Pro	Ile	Phe	Ala	Thr	Ser	Tyr	
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Ile	Val	Ile	Phe	Leu	Tyr	Ile	Ser	Leu	Ala	Leu	Gly	Ser	Tyr	Ser	Ser	
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Trp	Ser	Arg	Val	Met	Val	Asp	Ser	Lys	Ala	Thr	Leu	Gly	Leu	Gly	Gly	
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Val	Ala	Val	Val	Leu	Gly	Ala	Val	Met	Ala	Ala	Met	Gly	Phe	Phe	Ser	
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Tyr	Leu	Gly	Ile	Arg	Ser	Ser	Leu	Val	Ile	Leu	Gln	Val	Val	Pro	Phe	
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Leu	Val	Leu	Ser	Val	Gly	Ala	Asp	Asn	Ile	Phe	Ile	Phe	Val	Leu	Glu	
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Tyr	Gln	Arg	Leu	Pro	Arg	Arg	Pro	Gly	Glu	Pro	Arg	Glu	Val	His	Ile	
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ggg	cga	gcc	cta	ggc	agg	gtg	gct	ccc	agc	atg	ctg	ttg	tgc	agc	ctc	2256
Gly	Arg	Ala	Leu	Gly	Arg	Val	Ala	Pro	Ser	Met	Leu	Leu	Cys	Ser	Leu	
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Ser	Glu	Ala	Ile	Cys	Phe	Phe	Leu	Gly	Ala	Leu	Thr	Pro	Met	Pro	Ala	
		755					760					765				
gtg	cgg	acc	ttt	gcc	ctg	acc	tct	ggc	ctt	gca	gtg	atc	ctt	gac	ttc	2352
Val	Arg	Thr	Phe	Ala	Leu	Thr	Ser	Gly	Leu	Ala	Val	Ile	Leu	Asp	Phe	
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ctc	ctg	cag	atg	tca	gcc	ttt	gtg	gcc	ctg	ctc	tcc	ctg	gac	agc	aag	2400
Leu	Leu	Gln	Met	Ser	Ala	Phe	Val	Ala	Leu	Leu	Ser	Leu	Asp	Ser	Lys	



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Arg Gln Glu Ala Ser Arg Leu Asp Val Cys Cys Cys Val Lys Pro Gln				
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gag ctg ccc ccg cct ggc cag gga gag ggg ctc ctg ctt ggc ttc ttc				2496
Glu Leu Pro Pro Gly Gln Gly Glu Gly Leu Leu Leu Gly Phe Phe				
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caa aag gct tat gcc ccc ttc ctg ctg cac tgg atc act cga ggt gtt				2544
Gln Lys Ala Tyr Ala Pro Phe Leu Leu His Trp Ile Thr Arg Gly Val				
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Val Leu Leu Leu Phe Leu Ala Leu Phe Gly Val Ser Leu Tyr Ser Met				
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Cys His Ile Ser Val Gly Leu Asp Gln Glu Leu Ala Leu Pro Lys Asp				
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tcg tac ctg ctt gac tat ttc ctc ttt ctg aac cgc tac ttc gag gtg				2688
Ser Tyr Leu Leu Asp Tyr Phe Leu Phe Leu Asn Arg Tyr Phe Glu Val				
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Gly Ala Pro Val Tyr Phe Val Thr Thr Leu Gly Tyr Asn Phe Ser Ser				
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Glu Ala Gly Met Asn Ala Ile Cys Ser Ser Ala Gly Cys Asn Asn Phe				
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Ser Phe Thr Gln Lys Ile Gln Tyr Ala Thr Glu Phe Pro Glu Gln Ser				
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Tyr Leu Ala Ile Pro Ala Ser Ser Trp Val Asp Asp Phe Ile Asp Trp				
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ctg acc ccg tcc tcc tgc tgc cgc ctt tat ata tct ggc ccc aat aag				2928
Leu Thr Pro Ser Ser Cys Cys Arg Leu Tyr Ile Ser Gly Pro Asn Lys				
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Cys Met Ser Ile Thr Met Gly Ser Val Arg Pro Ser Val Glu Gln Phe				
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cat aag tat ctt ccc tgg ttc ctg aac gac cgg ccc aac atc aaa				3069
His Lys Tyr Leu Pro Trp Phe Leu Asn Asp Arg Pro Asn Ile Lys				
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Cys Pro Lys Gly Gly Leu Ala Ala Tyr Ser Thr Ser Val Asn Leu				
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Thr Ser Asp Gly Gln Val Leu Ala Ser Arg Phe Met Ala Tyr His	
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Lys Pro Leu Lys Asn Ser Gln Asp Tyr Thr Glu Ala Leu Arg Ala	
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Ala Arg Glu Leu Ala Ala Asn Ile Thr Ala Asp Leu Arg Lys Val	
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cct gga aca gac ccg gct ttt gag gtc ttc ccc tac acg atc acc	3294
Pro Gly Thr Asp Pro Ala Phe Glu Val Phe Pro Tyr Thr Ile Thr	
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Trp Asp Ile Ser Tyr Asn Ala Val Ser Leu Ile Asn Leu Val Ser	
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Ala Val Gly Met Ser Val Glu Phe Val Ser His Ile Thr Arg Ser	
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Phe Ala Ile Ser Thr Lys Pro Thr Trp Leu Glu Arg Ala Lys Glu	
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Ala Thr Ile Ser Met Gly Ser Ala Val Phe Ala Gly Val Ala Met	
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Arg	Ala	Glu	Glu	Ala	Val	Ala	Ala	Val	Met	Val	Ala	Ser	Cys	Pro	
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His	Ser	Phe	Glu	Gly	Ser	Ile	Lys	Gly	Ala	Gly	Ala	Ile	Ser	Asn	
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Lys	Ile	Thr	Gly	Asp	His	Leu	Ile	Leu	Leu	Gln	Lys	Ile	Cys	Pro	Arg
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Leu	Tyr	Thr	Gly	Pro	Asn	Thr	Gln	Ala	Cys	Cys	Ser	Ala	Lys	Gln	Leu
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Val	Ser	Leu	Glu	Ala	Ser	Leu	Ser	Ile	Thr	Lys	Ala	Leu	Leu	Thr	Arg
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Cys Pro Ala Cys Ser Asp Asn Phe Val Asn Leu His Cys His Asn Thr  
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Leu Gly Ala Gly Gln Leu Pro Ala Val Val Ala Tyr Glu Ala Phe Tyr  
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Val Pro Ala Ala Ala Thr Leu Ala Val Gly Thr Met Cys Gly Val Tyr  
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Gly Ser Ala Leu Cys Asn Ala Gln Arg Trp Leu Asn Phe Gln Gly Asp  
 195 200 205

Thr Gly Asn Gly Leu Ala Pro Leu Asp Ile Thr Phe His Leu Leu Glu  
 210 215 220

Pro Gly Gln Ala Val Gly Ser Gly Ile Gln Pro Leu Asn Glu Gly Val  
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Lys Gly Thr Ser Leu Ser Asp Lys Leu Ser Phe Ser Thr His Thr Leu  
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Arg Ser Ser Tyr Arg Tyr Asp Ser Leu Leu Leu Gly Pro Lys Asn Phe				
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Glu Arg Leu Arg His Leu Gln Val Trp Ser Pro Glu Ala Gln Arg Asn				
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675 680 685

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Leu Val Leu Ser Val Gly Ala Asp Asn Ile Phe Ile Phe Val Leu Glu  
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725 730 735

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Lys Pro Leu Lys Asn Ser Gln Asp Tyr Thr Glu Ala Leu Arg Ala  
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<212> DNA

<213> Rattus sp.

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<211> 3993

<212> DNA

<213> Rattus sp.

<400> 10

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<213> Mus sp.

<220>

<221> CDS

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<223>

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Thr Phe Tyr Glu Glu Cys Gly Lys Asn Pro Glu Leu Ser Gly Gly Leu	
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Tyr Asn Gly Pro Asn Asp Thr Tyr Ala Cys Cys Ser Thr Lys Gln Leu	
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Val Ser Leu Asp Ser Ser Leu Ser Ile Thr Lys Ala Leu Leu Thr Arg	
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Cys Pro Ala Cys Ser Glu Asn Phe Val Ser Ile His Cys His Asn Thr	
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Ser Gly Ile Leu Ser Leu Asp Leu Leu Gln Glu Leu Leu Glu Leu Gln	
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Glu Arg Leu Arg His Leu Gln Val Trp Ser His Glu Ala Gln Arg Asn	
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Ile Ser Leu Gln Asp Ile Cys Tyr Ala Pro Leu Asn Pro His Asn Thr	
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Ser Leu Thr Asp Cys Cys Val Asn Ser Leu Leu Gln Tyr Phe Gln Asn	
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Asn His Thr Leu Leu Leu Leu Thr Ala Asn Gln Thr Leu Asn Gly Gln	
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850 855 860	
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Tyr	Val	Ala	Ile	Ala	Ala	Ser	Ser	Trp	Val	Asp	Asp	Phe	Ile	Asp	Trp	
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Lys	Asp	Glu	Phe	Cys	Pro	Ser	Thr	Asp	Thr	Ser	Phe	Asn	Cys	Leu	Lys	
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Asn	Cys	Met	Asn	Arg	Thr	Leu	Gly	Pro	Val	Arg	Pro	Thr	Thr	Glu	Gln	
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Phe	His	Lys	Tyr	Leu	Pro	Trp	Phe	Leu	Asn	Asp	Thr	Pro	Asn	Ile		
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Leu	Ser	Ser	Asp	Gly	Gln	Ile	Ile	Ala	Ser	Gln	Phe	Met	Ala	Tyr		
	1040					1045					1050					
cac	aag	ccc	tta	cgg	aac	tca	cag	gac	ttt	aca	gaa	gct	ctc	cgg		3204
His	Lys	Pro	Leu	Arg	Asn	Ser	Gln	Asp	Phe	Thr	Glu	Ala	Leu	Arg		
	1055					1060					1065					
gca	tcc	cgg	ttg	cta	gca	gcc	aac	atc	aca	gct	gaa	cta	cgg	aag		3249
Ala	Ser	Arg	Leu	Leu	Ala	Ala	Asn	Ile	Thr	Ala	Glu	Leu	Arg	Lys		
	1070					1075					1080					
gtg	cct	ggg	aca	gat	ccc	aac	ttt	gag	gtc	ttc	cct	tac	acg	atc		3294
Val	Pro	Gly	Thr	Asp	Pro	Asn	Phe	Glu	Val	Phe	Pro	Tyr	Thr	Ile		
	1085					1090					1095					
tcc	aat	gtg	ttc	tac	cag	caa	tac	ctg	acg	gtt	ctc	cct	gag	gga		3339
Ser	Asn	Val	Phe	Tyr	Gln	Gln	Tyr	Leu	Thr	Val	Leu	Pro	Glu	Gly		
	1100					1105					1110					
atc	ttc	act	ctt	gct	ctc	tgc	ttc	gtg	ccc	acc	ttt	gtg	gtc	tgc		3384
Ile	Phe	Thr	Leu	Ala	Leu	Cys	Phe	Val	Pro	Thr	Phe	Val	Val	Cys		
	1115					1120					1125					
tac	ctc	cta	ctg	ggc	ctg	gac	ata	cgc	tca	ggc	atc	ctc	aac	ctg		3429
Tyr	Leu	Leu	Leu	Gly	Leu	Asp	Ile	Arg	Ser	Gly	Ile	Leu	Asn	Leu		

1130	1135	1140	
ctc tcc atc att atg atc	ctc gtg gac acc atc	ggc ctc atg gct	3474
Leu Ser Ile Ile Met Ile	Leu Val Asp Thr Ile	Gly Leu Met Ala	
1145	1150	1155	
gtg tgg ggt atc agc tac	aat gct gtg tcc ctc	atc aac ctt gtc	3519
Val Trp Gly Ile Ser Tyr	Asn Ala Val Ser Leu	Ile Asn Leu Val	
1160	1165	1170	
acg gca gtg ggc atg tct	gtg gag ttc gtg tcc	cac att acc cgg	3564
Thr Ala Val Gly Met Ser	Val Glu Phe Val Ser	His Ile Thr Arg	
1175	1180	1185	
tcc ttt gct gta agc acc	aag cct acc cgg ctg	gag aga gcc aaa	3609
Ser Phe Ala Val Ser Thr	Lys Pro Thr Arg Leu	Glu Arg Ala Lys	
1190	1195	1200	
gat gct act atc ttc atg	ggc agt gcg gtg ttt	gct gga gtg gcc	3654
Asp Ala Thr Ile Phe Met	Gly Ser Ala Val Phe	Ala Gly Val Ala	
1205	1210	1215	
atg acc aac ttc ccg ggc	atc ctc atc ctg ggc	ttt gct cag gcc	3699
Met Thr Asn Phe Pro Gly	Ile Leu Ile Leu Gly	Phe Ala Gln Ala	
1220	1225	1230	
cag ctt atc cag att ttc	ttc ttc cgc ctc aac	ctc ctg atc acc	3744
Gln Leu Ile Gln Ile Phe	Phe Phe Arg Leu Asn	Leu Leu Ile Thr	
1235	1240	1245	
ttg ctg ggt ctg cta cac	ggc ctg gtc ttc ctg	ccc gtt gtc ctc	3789
Leu Leu Gly Leu Leu His	Gly Leu Val Phe Leu	Pro Val Val Leu	
1250	1255	1260	
agc tat ctg ggg cca gat	gtt aac caa gct ctg	gta ctg gag gag	3834
Ser Tyr Leu Gly Pro Asp	Val Asn Gln Ala Leu	Val Leu Glu Glu	
1265	1270	1275	
aaa cta gcc act gag gca	gcc atg gtc tca gag	cct tct tgc cca	3879
Lys Leu Ala Thr Glu Ala	Ala Met Val Ser Glu	Pro Ser Cys Pro	
1280	1285	1290	
cag tac ccc ttc ccg gct	gat gca aac acc agt	gac tat gtt aac	3924
Gln Tyr Pro Phe Pro Ala	Asp Ala Asn Thr Ser	Asp Tyr Val Asn	
1295	1300	1305	
tac ggc ttt aat cca gaa	ttt atc cct gaa att	aat gct gct agc	3969
Tyr Gly Phe Asn Pro Glu	Phe Ile Pro Glu Ile	Asn Ala Ala Ser	
1310	1315	1320	
agc tct ctg ccc aaa agt	gac caa aag ttc taa		4002
Ser Ser Leu Pro Lys Ser	Asp Gln Lys Phe		
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Ser Ala Gln Gly Glu Leu Tyr Thr Pro Thr His Lys Ala Gly Phe Cys  
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Thr Phe Tyr Glu Glu Cys Gly Lys Asn Pro Glu Leu Ser Gly Gly Leu  
35 40 45

Thr Ser Leu Ser Asn Ile Ser Cys Leu Ser Asn Thr Pro Ala Arg His  
50 55 60

Val Thr Gly Asp His Leu Ala Leu Leu Gln Arg Val Cys Pro Arg Leu  
65 70 75 80

Tyr Asn Gly Pro Asn Asp Thr Tyr Ala Cys Cys Ser Thr Lys Gln Leu  
85 90 95

Val Ser Leu Asp Ser Ser Leu Ser Ile Thr Lys Ala Leu Leu Thr Arg  
100 105 110

Cys Pro Ala Cys Ser Glu Asn Phe Val Ser Ile His Cys His Asn Thr  
115 120 125

Cys Ser Pro Asp Gln Ser Leu Phe Ile Asn Val Thr Arg Val Val Gln  
130 135 140

Arg Asp Pro Gly Gln Leu Pro Ala Val Val Ala Tyr Glu Ala Phe Tyr  
145 150 155 160

Gln Arg Ser Phe Ala Glu Lys Ala Tyr Glu Ser Cys Ser Arg Val Arg  
165 170 175

Ile Pro Ala Ala Ala Ser Leu Ala Val Gly Ser Met Cys Gly Val Tyr  
180 185 190

Gly Ser Ala Leu Cys Asn Ala Gln Arg Trp Leu Asn Phe Gln Gly Asp  
195 200 205

Thr Gly Asn Gly Leu Ala Pro Leu Asp Ile Thr Phe His Leu Leu Glu  
210 215 220



Pro Gly Gln Ala Leu Ala Asp Gly Met Lys Pro Leu Asp Gly Lys Ile  
 225 230 235 240

Thr Pro Cys Asn Glu Ser Gln Gly Glu Asp Ser Ala Ala Cys Ser Cys  
 245 250 255

Gln Asp Cys Ala Ala Ser Cys Pro Val Ile Pro Pro Pro Pro Ala Leu  
 260 265 270

Arg Pro Ser Phe Tyr Met Gly Arg Met Pro Gly Trp Leu Ala Leu Ile  
 275 280 285

Ile Ile Phe Thr Ala Val Phe Val Leu Leu Ser Val Val Leu Val Tyr  
 290 295 300

Leu Arg Val Ala Ser Asn Arg Asn Lys Asn Lys Thr Ala Gly Ser Gln  
 305 310 315 320

Glu Ala Pro Asn Leu Pro Arg Lys Arg Arg Phe Ser Pro His Thr Val  
 325 330 335

Leu Gly Arg Phe Phe Glu Ser Trp Gly Thr Arg Val Ala Ser Trp Pro  
 340 345 350

Leu Thr Val Leu Ala Leu Ser Phe Ile Val Val Ile Ala Leu Ser Val  
 355 360 365

Gly Leu Thr Phe Ile Glu Leu Thr Thr Asp Pro Val Glu Leu Trp Ser  
 370 375 380

Ala Pro Lys Ser Gln Ala Arg Lys Glu Lys Ala Phe His Asp Glu His  
 385 390 395 400

Phe Gly Pro Phe Phe Arg Thr Asn Gln Ile Phe Val Thr Ala Lys Asn  
 405 410 415

Arg Ser Ser Tyr Lys Tyr Asp Ser Leu Leu Leu Gly Pro Lys Asn Phe  
 420 425 430

Ser Gly Ile Leu Ser Leu Asp Leu Leu Gln Glu Leu Leu Glu Leu Gln  
 435 440 445

Glu Arg Leu Arg His Leu Gln Val Trp Ser His Glu Ala Gln Arg Asn  
 450 455 460

Ile Ser Leu Gln Asp Ile Cys Tyr Ala Pro Leu Asn Pro His Asn Thr  
 465 470 475 480

Ser Leu Thr Asp Cys Cys Val Asn Ser Leu Leu Gln Tyr Phe Gln Asn  
 485 490 495

Asn His Thr Leu Leu Leu Leu Thr Ala Asn Gln Thr Leu Asn Gly Gln  
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Thr Ser Leu Val Asp Trp Lys Asp His Phe Leu Tyr Cys Ala Asn Ala  
 515 520 525

Pro Leu Thr Tyr Lys Asp Gly Thr Ala Leu Ala Leu Ser Cys Ile Ala  
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Asp Tyr Gly Ala Pro Val Phe Pro Phe Leu Ala Val Gly Gly Tyr Gln  
 545 550 555 560

Gly Thr Asp Tyr Ser Glu Ala Glu Ala Leu Ile Ile Thr Phe Ser Ile  
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Asn Asn Tyr Pro Ala Asp Asp Pro Arg Met Ala His Ala Lys Leu Trp  
 580 585 590

Glu Glu Ala Phe Leu Lys Glu Met Gln Ser Phe Gln Arg Ser Thr Ala  
 595 600 605

Asp Lys Phe Gln Ile Ala Phe Ser Ala Glu Arg Ser Leu Glu Asp Glu  
 610 615 620

Ile Asn Arg Thr Thr Ile Gln Asp Leu Pro Val Phe Ala Ile Ser Tyr  
 625 630 635 640

Leu Ile Val Phe Leu Tyr Ile Ser Leu Ala Leu Gly Ser Tyr Ser Arg  
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Trp Ser Arg Val Ala Val Asp Ser Lys Ala Thr Leu Gly Leu Gly Gly  
 660 665 670

Val Ala Val Val Leu Gly Ala Val Val Ala Ala Met Gly Phe Tyr Ser  
 675 680 685

Tyr Leu Gly Val Pro Ser Ser Leu Val Ile Ile Gln Val Val Pro Phe  
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Leu Val Leu Ala Val Gly Ala Asp Asn Ile Phe Ile Phe Val Leu Glu

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Tyr	Gln	Arg	Leu	Pro	Arg	Met	Pro	Gly	Glu	Gln	Arg	Glu	Ala	His	Ile
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Gly	Arg	Thr	Leu	Gly	Ser	Val	Ala	Pro	Ser	Met	Leu	Leu	Cys	Ser	Leu
			740					745					750		
Ser	Glu	Ala	Ile	Cys	Phe	Phe	Leu	Gly	Ala	Leu	Thr	Ser	Met	Pro	Ala
		755					760					765			
Val	Arg	Thr	Phe	Ala	Leu	Thr	Ser	Gly	Leu	Ala	Ile	Ile	Phe	Asp	Phe
	770					775					780				
Leu	Leu	Gln	Met	Thr	Ala	Phe	Val	Ala	Leu	Leu	Ser	Leu	Asp	Ser	Lys
785					790					795					800
Arg	Gln	Glu	Ala	Ser	Arg	Pro	Asp	Val	Val	Cys	Cys	Phe	Ser	Ser	Arg
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Asn	Leu	Pro	Pro	Pro	Lys	Gln	Lys	Glu	Gly	Leu	Leu	Leu	Cys	Phe	Phe
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Arg	Lys	Ile	Tyr	Thr	Pro	Phe	Leu	Leu	His	Arg	Phe	Ile	Arg	Pro	Val
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Ser	Tyr	Leu	Ile	Asp	Tyr	Phe	Leu	Phe	Leu	Asn	Arg	Tyr	Leu	Glu	Val
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		915					920					925			
Ser	Leu	Thr	Gln	Lys	Ile	Gln	Tyr	Ala	Ser	Glu	Phe	Pro	Asn	Gln	Ser
	930					935					940				
Tyr	Val	Ala	Ile	Ala	Ala	Ser	Ser	Trp	Val	Asp	Asp	Phe	Ile	Asp	Trp
945					950					955					960

Leu Thr Pro Ser Ser Ser Cys Cys Arg Ile Tyr Thr Arg Gly Pro His  
965 970 975

Lys Asp Glu Phe Cys Pro Ser Thr Asp Thr Ser Phe Asn Cys Leu Lys  
980 985 990

Asn Cys Met Asn Arg Thr Leu Gly Pro Val Arg Pro Thr Thr Glu Gln  
995 1000 1005

Phe His Lys Tyr Leu Pro Trp Phe Leu Asn Asp Thr Pro Asn Ile  
1010 1015 1020

Arg Cys Pro Lys Gly Gly Leu Ala Ala Tyr Arg Thr Ser Val Asn  
1025 1030 1035

Leu Ser Ser Asp Gly Gln Ile Ile Ala Ser Gln Phe Met Ala Tyr  
1040 1045 1050

His Lys Pro Leu Arg Asn Ser Gln Asp Phe Thr Glu Ala Leu Arg  
1055 1060 1065

Ala Ser Arg Leu Leu Ala Ala Asn Ile Thr Ala Glu Leu Arg Lys  
1070 1075 1080

Val Pro Gly Thr Asp Pro Asn Phe Glu Val Phe Pro Tyr Thr Ile  
1085 1090 1095

Ser Asn Val Phe Tyr Gln Gln Tyr Leu Thr Val Leu Pro Glu Gly  
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Ile Phe Thr Leu Ala Leu Cys Phe Val Pro Thr Phe Val Val Cys  
1115 1120 1125

Tyr Leu Leu Leu Gly Leu Asp Ile Arg Ser Gly Ile Leu Asn Leu  
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Leu Ser Ile Ile Met Ile Leu Val Asp Thr Ile Gly Leu Met Ala  
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Val Trp Gly Ile Ser Tyr Asn Ala Val Ser Leu Ile Asn Leu Val  
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Thr Ala Val Gly Met Ser Val Glu Phe Val Ser His Ile Thr Arg  
1175 1180 1185

Ser Phe Ala Val Ser Thr Lys Pro Thr Arg Leu Glu Arg Ala Lys  
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Asp Ala Thr Ile Phe Met Gly Ser Ala Val Phe Ala Gly Val Ala  
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Met Thr Asn Phe Pro Gly Ile Leu Ile Leu Gly Phe Ala Gln Ala  
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Gln Leu Ile Gln Ile Phe Phe Phe Arg Leu Asn Leu Leu Ile Thr  
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Leu Leu Gly Leu Leu His Gly Leu Val Phe Leu Pro Val Val Leu  
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Ser Tyr Leu Gly Pro Asp Val Asn Gln Ala Leu Val Leu Glu Glu  
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Lys Leu Ala Thr Glu Ala Ala Met Val Ser Glu Pro Ser Cys Pro  
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Gln Tyr Pro Phe Pro Ala Asp Ala Asn Thr Ser Asp Tyr Val Asn  
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Tyr Gly Phe Asn Pro Glu Phe Ile Pro Glu Ile Asn Ala Ala Ser  
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 aayccngary tnwsnggngg nytnacnwsn ytnwsnaaya thwsntgyyt nwsnaayacn 180  
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 Leu Ala Gln Ser Glu Pro Tyr Thr Thr Ile His Gln Pro Gly Tyr Cys  
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 Ser Leu Glu Ala Ser Leu Ser Ile Thr Lys Ala Leu Leu Thr Arg Cys  
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 Pro Ala Cys Ser Asp Asn Phe Val Asn Leu His Cys His Asn Thr Cys  
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His Ser Phe Ala Glu Gln Ser Tyr Asp Ser Cys Ser Arg Val Arg Val	
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Pro Ala Ala Ala Thr Leu Ala Val Gly Thr Met Cys Gly Val Tyr Gly	
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Ser Ala Leu Cys Asn Ala Gln Arg Trp Leu Asn Phe Gln Gly Asp Thr	
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Ile Leu Cys Ser Val Phe Ala Val Val Thr Ile Leu Leu Val Gly Phe	
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Arg Val Ala Pro Ala Arg Asp Lys Ser Lys Met Val Asp Pro Lys Lys	
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Gly Thr Ser Leu Ser Asp Lys Leu Ser Phe Ser Thr His Thr Leu Leu	
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Gly Gln Phe Phe Gln Gly Trp Gly Thr Trp Val Ala Ser Trp Pro Leu	
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Thr Ile Leu Val Leu Ser Val Ile Pro Val Val Ala Leu Ala Ala Gly	
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Leu Val Phe Thr Glu Leu Thr Thr Asp Pro Val Glu Leu Trp Ser Ala	
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Pro Asn Ser Gln Ala Arg Ser Glu Lys Ala Phe His Asp Gln His Phe	
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Gly Pro Phe Phe Arg Thr Asn Gln Val Ile Leu Thr Ala Pro Asn Arg	
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Ser Ser Tyr Arg Tyr Asp Ser Leu Leu Gly Pro Lys Asn Phe Ser	
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Gly Ile Leu Asp Leu Asp Leu Leu Leu Glu Leu Leu Glu Leu Gln Glu	
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Arg Leu Arg His Leu Gln Val Trp Ser Pro Glu Ala Gln Arg Asn Ile	
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Ser Leu Gln Asp Ile Cys Tyr Ala Pro Leu Asn Pro Asp Asn Thr Ser	
470 475 480	
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Leu Tyr Asp Cys Cys Ile Asn Ser Leu Leu Gln Tyr Phe Gln Asn Asn	
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Leu Thr Phe Lys Asp Gly Thr Ala Leu Ala Leu Ser Cys Met Ala Asp	
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Tyr Gly Ala Pro Val Phe Pro Phe Leu Ala Ile Gly Gly Tyr Lys Gly	
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Lys Asp Tyr Ser Glu Ala Glu Ala Leu Ile Met Thr Phe Ser Leu Asn	
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Asn Tyr Pro Ala Gly Asp Pro Arg Leu Ala Gln Ala Lys Leu Trp Glu	
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Glu Ala Phe Leu Glu Glu Met Arg Ala Phe Gln Arg Arg Met Ala Gly	
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Met Phe Gln Val Thr Phe Met Ala Glu Arg Ser Leu Glu Asp Glu Ile	
610 615 620 625	
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Val	Ile	Phe	Leu	Tyr	Ile	Ser	Leu	Ala	Leu	Gly	Ser	Tyr	Ser	Ser	Trp	
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agc	cga	gtg	atg	gtg	gac	tcc	aag	gcc	acg	ctg	ggc	ctc	ggc	ggg	gtg	2075
Ser	Arg	Val	Met	Val	Asp	Ser	Lys	Ala	Thr	Leu	Gly	Leu	Gly	Gly	Val	
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gcc	gtg	gtc	ctg	gga	gca	gtc	atg	gct	gcc	atg	ggc	ttc	ttc	tcc	tac	2123
Ala	Val	Val	Leu	Gly	Ala	Val	Met	Ala	Ala	Met	Gly	Phe	Phe	Ser	Tyr	
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Val	Leu	Ser	Val	Gly	Ala	Asp	Asn	Ile	Phe	Ile	Phe	Val	Leu	Glu	Tyr	
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Gln	Arg	Leu	Pro	Arg	Arg	Pro	Gly	Glu	Pro	Arg	Glu	Val	His	Ile	Gly	
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Arg	Ala	Leu	Gly	Arg	Val	Ala	Pro	Ser	Met	Leu	Leu	Cys	Ser	Leu	Ser	
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Glu	Ala	Ile	Cys	Phe	Phe	Leu	Gly	Ala	Leu	Thr	Pro	Met	Pro	Ala	Val	
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cgg	acc	ttt	gcc	ctg	acc	tct	ggc	ctt	gca	gtg	atc	ctt	gac	ttc	ctc	2411
Arg	Thr	Phe	Ala	Leu	Thr	Ser	Gly	Leu	Ala	Val	Ile	Leu	Asp	Phe	Leu	
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Leu	Gln	Met	Ser	Ala	Phe	Val	Ala	Leu	Leu	Ser	Leu	Asp	Ser	Lys	Arg	
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cag	gag	gcc	tcc	cgg	ttg	gac	gtc	tgc	tgc	tgt	gtc	aag	ccc	cag	gag	2507
Gln	Glu	Ala	Ser	Arg	Leu	Asp	Val	Cys	Cys	Cys	Val	Lys	Pro	Gln	Glu	
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Lys	Ala	Tyr	Ala	Pro	Phe	Leu	Leu	His	Trp	Ile	Thr	Arg	Gly	Val	Val	
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ccc aaa ggc ggc ctg gca gca tac agc acc tct gtg aac ttg act Pro Lys Gly Gly Leu Ala Ala Tyr Ser Thr Ser Val Asn Leu Thr 1025 1030 1035			3173
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gca gcc aac atc act gct gac ctg cgg aaa gtg cct gga aca gac Ala Ala Asn Ile Thr Ala Asp Leu Arg Lys Val Pro Gly Thr Asp 1100 1105 1110			3398

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Phe	Phe	Phe	Arg	Leu	Asn	Leu	Leu	Ile	Thr	Leu	Leu	Gly	Leu	Leu	
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His	Gly	Leu	Val	Phe	Leu	Pro	Val	Ile	Leu	Ser	Tyr	Val	Gly	Pro	
1280					1285					1290					
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Asp	Val	Asn	Pro	Ala	Leu	Ala	Leu	Glu	Gln	Lys	Arg	Ala	Glu	Glu	
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Ala	Val	Ala	Ala	Val	Met	Val	Ala	Ser	Cys	Pro	Asn	His	Pro	Ser	
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Arg	Val	Ser	Thr	Ala	Asp	Asn	Ile	Tyr	Val	Asn	His	Ser	Phe	Glu	
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<212> PRT

<213> Homo sapiens

<400> 44

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Cys Ala Phe Tyr Asp Glu Cys Gly Lys Asn Pro Glu Leu Ser Gly Ser  
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 Lys Ile Thr Gly Asp His Leu Ile Leu Leu Gln Lys Ile Cys Pro Arg  
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 Val Ser Leu Glu Ala Ser Leu Ser Ile Thr Lys Ala Leu Leu Thr Arg  
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 Cys Pro Ala Cys Ser Asp Asn Phe Val Asn Leu His Cys His Asn Thr  
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 Cys Ser Pro Asn Gln Ser Leu Phe Ile Asn Val Thr Arg Val Ala Gln  
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 Gln His Ser Phe Ala Glu Gln Ser Tyr Asp Ser Cys Ser Arg Val Arg  
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 Val Pro Ala Ala Ala Thr Leu Ala Val Gly Thr Met Cys Gly Val Tyr  
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 Thr Gly Asn Gly Leu Ala Pro Leu Asp Ile Thr Phe His Leu Leu Glu  
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 Gln Asp Cys Ala Ala Ser Cys Pro Ala Ile Ala Arg Pro Gln Ala Leu  
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 Asp Ser Thr Phe Tyr Leu Gly Gln Met Pro Gly Ser Leu Val Leu Ile



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Lys Gly Thr Ser Leu Ser Asp Lys Leu Ser Phe Ser Thr His Thr Leu				
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Leu Gly Gln Phe Phe Gln Gly Trp Gly Thr Trp Val Ala Ser Trp Pro				
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Leu Thr Ile Leu Val Leu Ser Val Ile Pro Val Val Ala Leu Ala Ala				
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Gly Leu Val Phe Thr Glu Leu Thr Thr Asp Pro Val Glu Leu Trp Ser				
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Ala Pro Asn Ser Gln Ala Arg Ser Glu Lys Ala Phe His Asp Gln His				
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Arg Ser Ser Tyr Arg Tyr Asp Ser Leu Leu Leu Gly Pro Lys Asn Phe				
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Ile Ser Leu Gln Asp Ile Cys Tyr Ala Pro Leu Asn Pro Asp Asn Thr				
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Thr Ser Gln Val Asp Trp Lys Asp His Phe Leu Tyr Cys Ala Asn Ala				
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Asp Tyr Gly Ala Pro Val Phe Pro Phe Leu Ala Ile Gly Gly Tyr Lys  
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Ile Val Ile Phe Leu Tyr Ile Ser Leu Ala Leu Gly Ser Tyr Ser Ser  
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 675 680 685

Tyr Leu Gly Ile Arg Ser Ser Leu Val Ile Leu Gln Val Val Pro Phe  
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Tyr Gln Arg Leu Pro Arg Arg Pro Gly Glu Pro Arg Glu Val His Ile  
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Gly Arg Ala Leu Gly Arg Val Ala Pro Ser Met Leu Leu Cys Ser Leu  
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Ser Glu Ala Ile Cys Phe Phe Leu Gly Ala Leu Thr Pro Met Pro Ala  
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Val Arg Thr Phe Ala Leu Thr Ser Gly Leu Ala Val Ile Leu Asp Phe  
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Gln Lys Ala Tyr Ala Pro Phe Leu Leu His Trp Ile Thr Arg Gly Val  
835 840 845  
  
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Cys His Ile Ser Val Gly Leu Asp Gln Glu Leu Ala Leu Pro Lys Asp  
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Asp Lys Phe Cys Pro Ser Thr Val Asn Ser Leu Asn Cys Leu Lys Asn  
980 985 990  
  
Cys Met Ser Ile Thr Met Gly Ser Val Arg Pro Ser Val Glu Gln Phe  
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Leu	Leu	Asp	Ser	Ala	Ser	Arg	Phe	Met	Ala	Tyr	His	Lys	Pro	Leu
1070						1075					1080			
Lys	Asn	Ser	Gln	Asp	Tyr	Thr	Glu	Ala	Leu	Arg	Ala	Ala	Arg	Glu
1085						1090					1095			
Leu	Ala	Ala	Asn	Ile	Thr	Ala	Asp	Leu	Arg	Lys	Val	Pro	Gly	Thr
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Ser	Thr	Lys	Pro	Thr	Trp	Leu	Glu	Arg	Ala	Lys	Glu	Ala	Thr	Ile
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Ser	Met	Gly	Ser	Ala	Val	Phe	Ala	Gly	Val	Ala	Met	Thr	Asn	Leu

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Leu His Gly Leu Val Phe Leu Pro Val Ile Leu Ser Tyr Val Gly				
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Pro Asp Val Asn Pro Ala Leu Ala Leu Glu Gln Lys Arg Ala Glu				
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Glu Ala Val Ala Ala Val Met Val Ala Ser Cys Pro Asn His Pro				
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Ser Arg Val Ser Thr Ala Asp Asn Ile Tyr Val Asn His Ser Phe				
1325		1330		1335
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<223> primer

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